ABSTRACT OF DISCLOSURE

This invention pertains to novel multiple quaternary ammonium salts and their derivatives represented by the formula:

$$\begin{bmatrix} R_{3}R_{2}R_{1}N & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ &$$

wherein each R_1 , R'_1 , R_2 , R'_2 , R_3 , R'_3 , R_4 or R_5 is independently selected from the group consisting alkyl, aryl, aralkyl and $-CH_2-CH(OR_6)-CH_2N^+R_1R_2R_3$; wherein one or more R_6 group is selected from the group consisting of:

and

and wherein An is an anion.

This invention also pertains to novel multiple quaternary ammonium salts and their derivatives represented by the formula:

$$\begin{bmatrix} OR_4 \\ R_3R_2R_1N \\ \bigoplus \end{bmatrix} An \bigcirc$$

wherein each R_1 , R'_1 , R_2 , R'_2 , R_3 or R'_3 group is independently selected from the group consisting of alkyl, aryl, aralkyl and -CH₂-CH(OR₄)-CH₂N⁺R₁R₂R₃; wherein one or more R₄ group is selected from the group consisting of:

and

and wherein An is an anion.

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